

Work Order ID 120292

June-20-14 10:38:31 AM

Page 1

SPLIT - 1

Push-ship Sept 8

\*120292\*

Item ID: 646.3511

Revision ID:

Item Name: Strut

Start Date: 6/13/14

Start Qty: 20.00

Required Date: 6/13/14

Req'd Qty: 20.00

Reference:

Accept

\*N900040100\*

Setup Start

\*NS1\*

Stop

\*NS2\*

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

\*NR1\*

Stop

\*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

646.3500

N/C 3

105

0.00

\*105\*

Waterjet

Memo

0.00

FLOW CNC Waterjet

CUT AS PER DRWG: 646.3500 N/C3

304 . 063

20

0

DAS  
23  
9-89

14-06-23

107

QC2- Inspect parts off machine FAI/FAIB

0.00

\*107\*

QC

Memo

0.00

Quality Control

20

0

DAS  
23  
9-89

14-06-23

111

QC8- Inspect parts - second check

0.00

\*111\*

QC

Memo

0.00

Quality Control

EB  
14/6/23  
DAS  
2  
9-89

(20)

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

**FAULT CATEGORY**

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other
--	--	---	--

Work Order ID 120292

June-20-14 10:38:31 AM

\*120292\*

Page 2

Item ID: 646.3511

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Strut

Start Date: 6/13/14 Start Qty: 20.00

\*20\*

Cust Item ID:

Required Date: 6/13/14 Req'd Qty: 20.00

\*20\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

115

0.00

\*115\*

Purchasing

Memo

0.00

Purchasing

ISSUE PO: \_\_\_\_\_

CUT AS PER DRWG: 646.3500 N/C3

140

0.00

\*140\*

Small Fab

Memo

0.00

Small Fab

1- Fabricate tube as per dwg

10 14-09-02 MAL

150

QC5- Inspect part completeness to step on W/O

0.00

\*150\*

QC

Memo

0.00

Quality Control

10 DAS 38 14-9-2 9-89



# Work Order ID 120292

June-20-14 10:38:31 AM

\*120292\*

Page 3

Item ID: 646.3511

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Strut

Start Date: 6/13/14

Start Qty: 20.00

\*20\*

Cust Item ID:

Required Date: 6/13/14

Req'd Qty: 20.00

\*20\*

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start \*NR1\*

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160

Weld per dwg. A/R S.S. rod Batch: M125054

0.00

\*160\*

Large Fab

Memo

0.00

Large Fab

Weld tube to plate as per dwg. DT9867  
Weld end were tube is punch.

10

14-09-03

MAL

170

QC9- Inspect visual per QSI004- Fusion Welds

0.00

\*170\*

QC

Memo

0.00

Quality Control

10

14-9-3

DAS  
50  
9-89

180

QC5- Inspect part completeness to step on W/O

0.00

\*180\*

QC

Memo

0.00

Quality Control

10

DAS  
38  
9-89

14-9-3

# Work Order ID 120292

\*120292\*

Page 4

June-20-14 10:38:31 AM

Item ID: 646.3511 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Strut  
 Start Date: 6/13/14 Start Qty: 20.00 \*20\* Cust Item ID:  
 Required Date: 6/13/14 Req'd Qty: 20.00 \*20\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							DAS 41 9-89
*220*						10			
Spray Paint	Memo	0.00							
Spray Painting	Prime as per dwg (see note 3)								14-9-7
	Batch: 128987								
230	QC14- Inspect Spray Paint	0.00							DAS 38 9-89
*230*						10	2		14/09/08
QC	Memo	0.00							
Quality Control									
240		0.00							
*240*									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING THE P# AND REV***					17/4/8	12		DAS 32 9-89

Work Order ID 120292

\*120292\*

Page 5

June-20-14 10:38:31 AM

Item ID: 646.3511 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Strut  
 Start Date: 6/13/14 Start Qty: 20.00 \*20\* Cust Item ID:  
 Required Date: 6/13/14 Req'd Qty: 20.00 \*20\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	QC21- Final Inspection - Work Order Release	0.00							
*250*									
QC	Memo	0.00							
Quality Control									

MLD 1409-09

1140909

# Picklist Print

Monday, June 09, 2014 1:44:27 PM

Page 1

Work Order ID: 120292

\*120292\*

Parent Item: 646.3511

\*646.3511\*

Parent Item Name: Strut

Start Date: 6/13/14

Required Date: 6/13/14

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A 12.10.19 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S16GA		Purchased		No			sf	144.8670		①			DAS
										**			23 9-89 14-06-23
<b>*M304S16GA*</b>													
304/316 Sheet .063													

Location	Loc Qty	Loc Code
MAT020	144.867	
M127821	75.567	
M128423	1.2	
M129192	68.1	

M304TR0.500W.049

Purchased

No

f

277.2805

18

**\*M304TR0 500W 049\***

\*\*

304 RD Tube .500 x .049W

Location	Loc Qty	Loc Code
MAT017	277.2805	
M127937	201.634	
M128833	75.6465	

x 7.083' —

7.083' 14-09-03 MAL







APICAL  
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.

04274

SHEET 1 OF 1

DWG NO. 646.3500

REV: NC

PREPARED BY J. SOTO

DATE: 12/02/2013

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: STRUT

APPROVED BY: ENGR *[Signature]*

MFG *Dawn Barber*

QC *[Signature]*

EFF. NEXT ORDER

TRANSACTION CODES (TC):  
A-ADD C-CREATE  
R-REVISE D-DELETE

REASON: REVISED DELTA NOTE 1 & 2.

SHEET 1, ZONE A1 IS:

IS

NOTES:

- 1 MATERIAL: AISI 304/ 316 SS SHEET .062 THK  
(REF DART SPEC. M304S16GA)
- 2 MATERIAL: AISI 304/316 SS 0.500 OD X 0.049 WALL  
(REF DART SPEC. M304TR0.500W0.049)  
ENSURE SEAMLESS TUBE IS USED
- 3 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2  
COLOR BLACK;  
CARDINAL 4860-50 PRETREATMENT PRIMER  
PRIME IAW MIL-P-23377J TYPE I CLASS N
4. DEBURR AND BREAK ALL SHARP EDGES
5. WELDS IAW MIL-STD-2219.  
TIG WELD WITH FILLER ROD

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 120292 MW  
(406-06

DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

APICAL  
INDUSTRIES, INC.

ENGINEERING CHANGE NOTIC. NO. 02440

SHEET 1 OF 1

DWG NO. 646.3500 REV: NC

PREPARED BY

S. HUFF

DATE 06/08/09

EFFECT ON DWG  
☐ INC. ☒ UNINC.

DWG TITLE:

STRUT

APPROVED BY:

ENGR *[Signature]*

MFG

QC

EFF. CURRENT ORDER AND STOCK

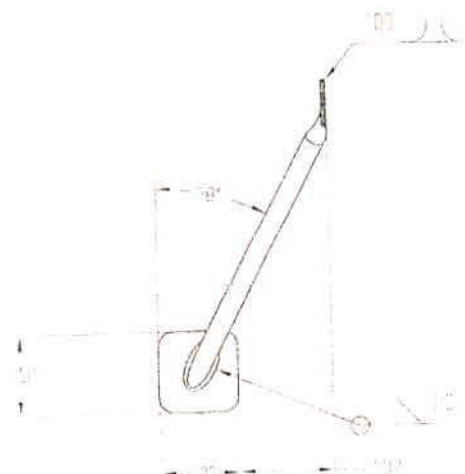
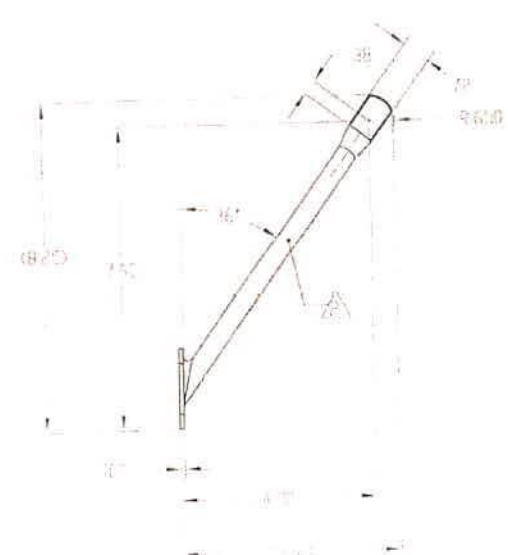
TRANSACTION CODES (TC):  
A-ADD C-CREATE  
R-REVISE D-DELETE

REASON: REVISED GEOMETRY TO ACCOMMODATE NEW EXISTING AIRCRAFT PROVISIONS

SHEET 2 IS:



646.3500 SHOWN  
646.3503 CHANGED



DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ FMS ☐ BOM

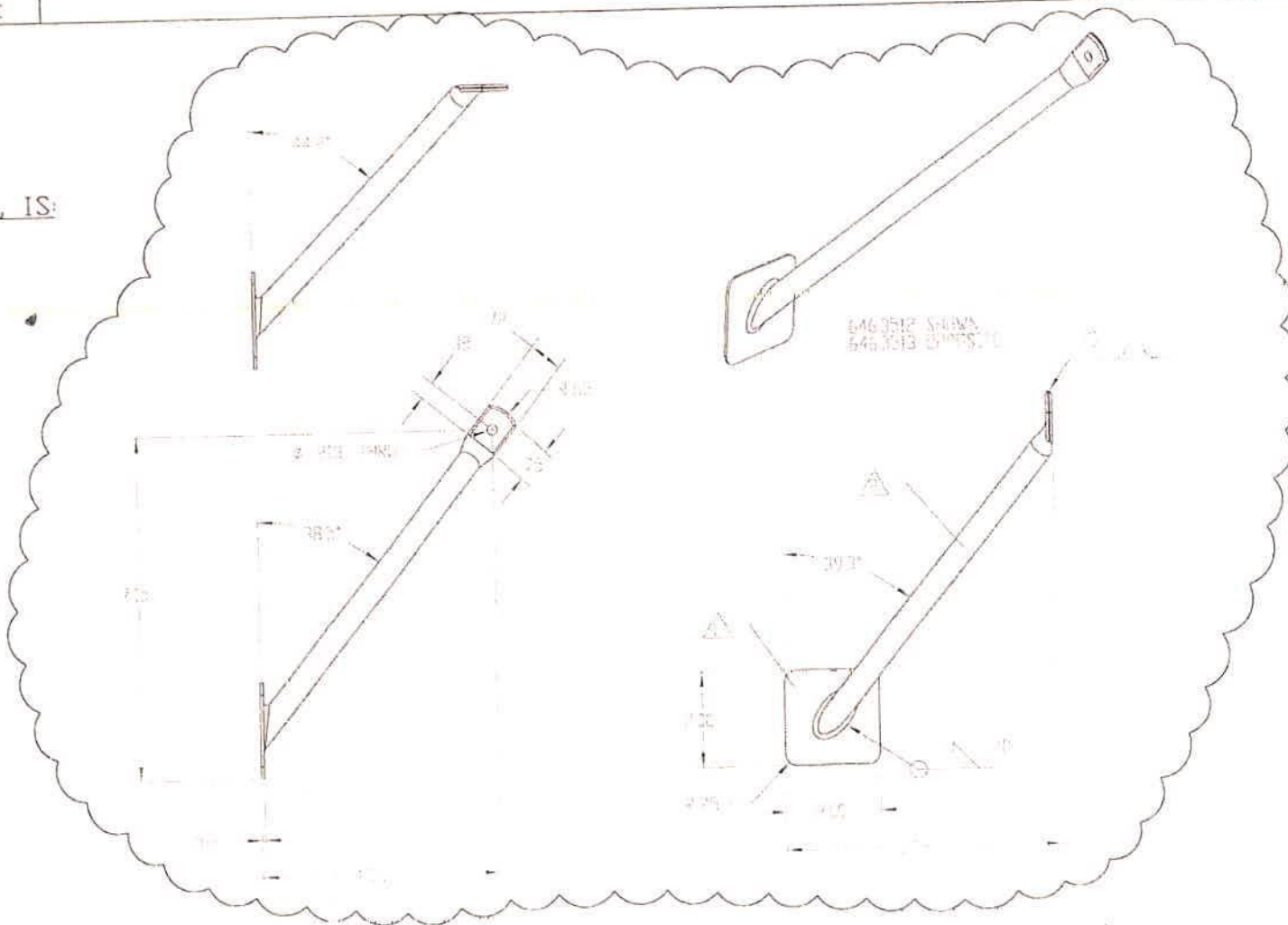
CHANGE CATEGORY  
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED  
☐ YES ☒ NO

APICAL  
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 02197		SHEET 1 OF 1	
DWG NO. 646.3500	REV: N/C	PREPARED BY S. HUFF	DATE: 01/05/09
DWG TITLE: STRUT		EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER
REASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BETTER FITMENT			
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE			

SHEET 2, IS:



DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCC ☐ ICA ☐ FMS ☐ BOM

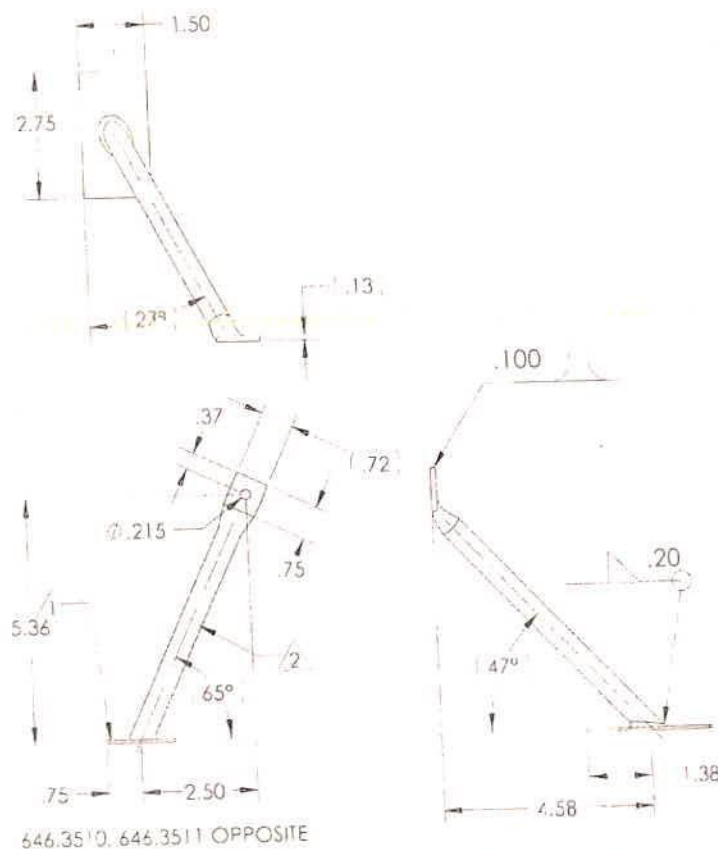
CHANGE CATEGORY  
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED  
☐ YES ☒ NO



NOTES:

1. MATERIAL: 6061-T6 ALUMINUM IAW AMS-QQ-A-250/11  
.062" THK
2. MATERIAL: 6061 T6 ALUMINUM IAW AMS-WW-T 700/6  
.500" OD: .062" WALL THK
3. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III CLASS 2  
COLOR BLACK;  
CARDINAL 4860-50 PRETREATMENT PRIMER  
PRIME IAW MIL-P-23377J TYPE I CLASS N
4. DEBURR AND BREAK ALL SHARP EDGES
5. WELDS IAW MIL-STD-2219,  
TIG WELD WITH FILLER ROD



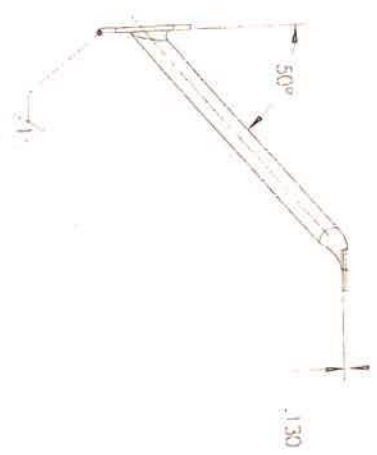
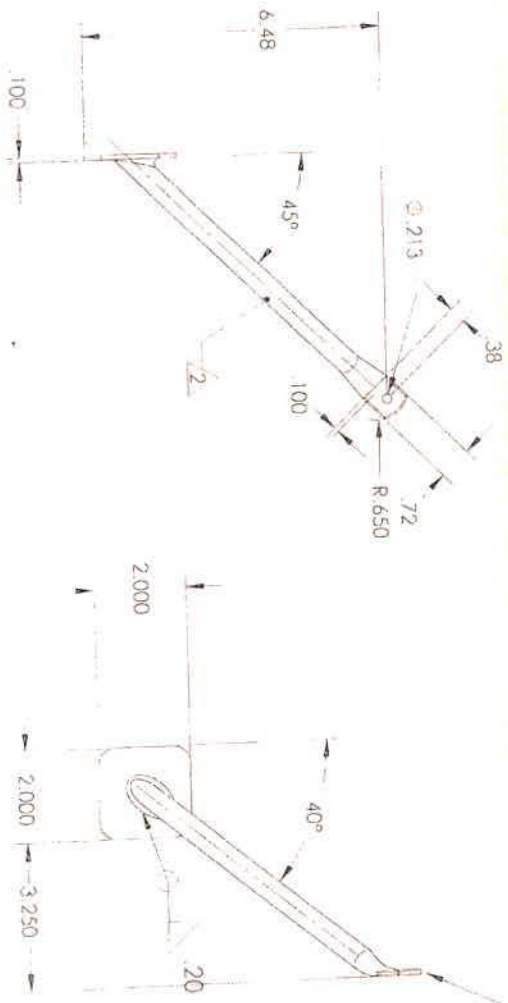
646.3510 SHOWN  
646.3511 OPPOSITE

UNINCORPORATED ECN(S)  
02197, 02440, 04274

REV	DATE	DESCRIPTION	BY	CHKD
1	01/11/00	INITIAL		
2	01/11/00	INITIAL		
3	01/11/00	INITIAL		
4	01/11/00	INITIAL		
5	01/11/00	INITIAL		
6	01/11/00	INITIAL		
7	01/11/00	INITIAL		
8	01/11/00	INITIAL		
9	01/11/00	INITIAL		
10	01/11/00	INITIAL		

APICAL INDUSTRIES  
1000 BENTLEY RD. SUITE 100  
CLARK, CA 92014-1012 (760) 724-5100

SIRUT  
646.3500



646.3512 SHOWN  
646.3513 OPPOSITE

APICAL INDUSTRIES  
STRUT  
646.3500